-continued

```
      290                 295                 300

Gly Pro Glu Gly Asp Gly Glu Ser Gln Thr Pro Glu Ala Asn Gly Gly
305                 310                 315                 320

Ala Glu Gly Glu Pro Lys Pro Gly Pro Ser Pro Asp Ala Asp Arg Pro
                325                 330                 335

Glu Gly Trp Pro Ser Leu Glu Ala Ile Thr His Pro Pro Pro Ala Pro
            340                 345                 350

Ala Thr Pro Ala Ala Pro Asp Ala Val Pro Val Ser Val Gly Ile Gly
        355                 360                 365

Ile Ala Ala Ala Ala Ile Ala Cys Val Ala Ala Ala Ala Ala Gly Ala
    370                 375                 380

Tyr Phe Val Tyr Thr Arg Arg Arg Gly Ala Gly Pro Leu Pro Arg Lys
385                 390                 395                 400

Pro Lys Lys Leu Pro Ala Phe Gly Asn Val Asn Tyr Ser Ala Leu Pro
                405                 410                 415

Gly
```

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 12 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(i i) MOLECULE TYPE: DNA (genomic)

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:7:

```
CTAGCTAGCT AG                                                  12
```

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 14 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(i i) MOLECULE TYPE: DNA (genomic)

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:8:

```
TTAAGTTAAC TTAA                                                14
```

We claim:

1. A vaccine composition to prevent or ameliorate the symptoms of disease comprising an isolated nucleotide sequence encoding a polypeptide containing at least one protective determinant of a BHV-1 polypeptide, operably linked to one or more control sequences such that said isolated nucleotide sequence is expressed in a host cell, the polypeptide being selected from the group consisting of gI, wherein said isolated nucleotide sequence comprises the contiguous nucleotide sequence depicted in FIG. **5**; gIII, wherein said isolated nucleotide sequence comprises the contiguous nucleotide sequence depicted in FIG. **6**; and gIV, wherein said isolated nucleotide sequence comprises the contiguous nucleotide sequence depicted in FIG. **7**.

2. A method of treating or preventing BHV-1 infection in a bovine host comprising administering to said bovine host a therapeutically effective amount of a vaccine composition according to claim **1**.

3. The vaccine composition of claim **1**, wherein the nucleotide sequence is the contiguous nucleotide sequence depicted in FIG. **5**.

4. The vaccine composition of claim **1**, wherein the nucleotide sequence is the contiguous nucleotide sequence depicted in FIG. **6**.

5. The vaccine composition of claim **1**, wherein the nucleotide sequence is the contiguous nucleotide sequence depicted in FIG. **7**.

6. A vaccine composition to prevent or ameliorate the symptoms of disease comprising an isolated nucleotide sequence encoding a polypeptide containing at least one protective determinant of a recombinant BHV-1 glycoprotein, operably linked to one or more control sequences such that said isolated nucleotide sequence is expressed in a host cell, said recombinant BHV-1 glycoprotein selected from the group consisting of BHV-1 gI having an unglycosylated molecular weight of about 105 kDa and encoded by the nucleotide sequence as depicted in FIG. **5**; gIII glycoprotein having a molecular weight of about 91 kDa and encoded by the nucleotide sequence as depicted in FIG. **6**; and a gIV glycoprotein having a molecular weight of about 71 kDa and encoded by the nucleotide sequence as depicted in FIG. **7**.